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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/631,885	08/04/2000	Zhengxiang Ma	11-10	1909

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EXAMINER

MUNOZ, GUILLERMO

ART UNIT	PAPER NUMBER
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2634

DATE MAILED: 02/27/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/631,885

Applicant(s)

MA ET AL.

Examiner

Guillermo Munoz

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 04 August 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-5,7-9,14-16,18,19,23-25 and 29-31 is/are rejected.
- 7) ☒ Claim(s) 2,6,10-13,17,20-22 and 26-28 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

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## DETAILED ACTION

### *Specification*

Applicant is reminded of the proper length for an abstract of the disclosure.

The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

The abstract of the disclosure is objected to because length exceeds 150 words.

Correction is required. See MPEP § 608.01(b).

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1, 3-5, 7, 9, 23, 29, and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ruuska (US Patent Number 6,584,330 B1) in view of Paulraj et al..

Regarding claim 1, Ruuska discloses all the subject matter claimed in claim 1 as follows: sharing the amplification of the at least first and second diversity-encoded signals between at least two amplifiers is anticipated by elements 123 and 121 in figure 14; sharing the

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amplification of the second signal between the at least two amplifiers is anticipated by elements 123, 133, and 121 of figure 13, except Ruuska's diversity-encoded method and non-diversity encoded method are taught as two different embodiments.

Paulraj et al. teach the use of a controller 120 in a wireless transmission system capable of selectively enabling / disabling diversity transmission for the purpose of compensating channel conditions ranging from Rayleigh to Rician fading conditions (Col. 2, lines 44-48 and Col. 7, lines 14-16).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify Ruuska's non-transmit diversity embodiment and transmit diversity embodiment of figures 13 and 14, respectively, with Paulraj et al.'s teaching of using a controller to select transmit diversity or non-transmit diversity, since Paulraj et al. suggest in column 2, lines 44-48 that the modification would address the need for fading compensation under varying channel conditions.

Regarding claim 3; Ruuska further teaches the claimed subject matter "forming first and second...at least two amplifiers", note Col. 11, line 31- Col.12, line 25 and Figure 14.

Regarding claim 4; Ruuska further teaches the claimed subject matter "forming the at least first and second...at least two amplifiers", note Col. 11, line 31- Col. 12, line 25 and Figure 13.

Regarding claim 5; Ruuska further teach "forming...in the digital domain" by the inherency of the digital microprocessor in Col. 2, lines 15-22.

Regarding claim 7, see claim 4.

Regarding claim 9, Paulraj et al. further teach the claimed subject matter "amplified first diversity-encoded...second diversity-encoded signal" in Col.3, line 10.

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Regarding claim 23, see claim 9.

Regarding claim 29, see claim 9.

Regarding claim 31, Paulraj et al. further teach the claimed subject matter  
“apparatus...one of the antennas” in elements 172 and 186 of figure 5.

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 8, 14-16, 18, 19, 24, 25, and 30 are rejected under 35 U.S.C. 102(e) as being  
anticipated by Ruuska (US Patent Number 6,584,330 B1).

Regarding claim 8, see claim 1 with regard to figure 14. Further, Ruuska teaches the two  
transmission branches (element 134 and 135) contain encoding circuitry in Col. 11, lines 49-50.

Regarding claim 14, Ruuska further teaches the claimed subject matter  
“transmitting...over second antenna” in figure 14.

Regarding claim 15, Ruuska further teaches the claimed subject matter  
“forming...second composite signals in figure 13.

Regarding claim 16, see claim 5.

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Regarding claim 18, Ruuska teach all the claimed subject matter of claim 18 as follows: the first device is anticipated by element 131 of figure 13; the first and second amplifiers are anticipated by elements 123 (Branch A and B) of figure 13; and second device is anticipated by element 133 of figure 13.

Regarding claim 19, Ruuska further teaches the claimed subject matter "channel processing circuitry...composite signals" in element 131 of figure 14.

Regarding claim 24, see claim 18.

Regarding claim 25, see claim 19.

Regarding claim 30, see claim 14.

### ***Claim Objections***

Claims 2, 6, 10-13, 17, 20-22, and 26-28 are objected to as being dependent upon a rejected base claims, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Guillermo Munoz whose telephone number is 703-305-4224. The examiner can normally be reached on Monday-Friday 8:30a.m-4:30p.m..


If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Chin can be reached on 703-305-4714. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



GM



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